

RESPONSE

The Office Action has been carefully considered and the following remarks are made in response hereto. Claims 53-57 are pending in the application. Claim 53 was objected to, and claims 53-57 stand rejected under 35 USC §103(a). Applicants respectfully traverse this basis of objection and rejection. The present Amendment and Response amends claim 53. Upon entry of the present Amendment and Response, claims 53-57 are pending and presented for reconsideration.

Applicants thank the Examiner for the telephone conference of December 7, 2004, where the undersigned and the Examiner discussed this Amendment and Response and concluded that the present Amendments overcome the references.

Claim Amendment and Relevant Support

Claim 53 has been amended to recite in part:

a conveying apparatus conveying said wafer from a position not under the head assembly to a position under the head assembly during processing.

Applicants submit that no new matter is introduced. Support for the foregoing amendment may be found in the Specification at, for example, page 4, lines 11-19; and page 10, lines 1-9.

Objection to Claim 53

Claim 53 has been objected to as being confusing to the Examiner. Applicants respectfully submit that claim 53, as amended, moots this objection.

Rejection of Claims Over of Kamieniecki in View of Yoshino

Claims 53-57 stand rejected under 35 USC 103(a) as being unpatentable over Kamieniecki et al (5,091,691), (“Kamieniecki”) in view of Yoshino et al (5,708,365), (“Yoshino”).

As amended, claim 53, in part, requires wafer movement from a position not under the head assembly to a position under the head assembly in a sealed chamber during processing.

Conversely, Kamieniecki discloses what is evidently a closed measurement container in which a wafer is placed under a SPV head. The device as shown does not move a wafer beneath the head in a processing environment. Instead the wafer is apparently removed from the processing line and placed in a measuring apparatus. In fact the Office Action states “Kamieniecki et al do not disclose a conveying apparatus as claimed.” (Office Action, page 3.)

Yoshino discloses a SPV measuring device in which a wafer is placed under a head and moved about causing relative motion between the surface and the head once the wafer is beneath the head. As the Office Action further states on page 4:

Yoshino et al disclose...a conveying apparatus (combination of Wafer Chuck, Moving Stage, and Stepping Motor Control Drive) conveying the wafer (Silicon Wafer) adjacent the voltage sensor (SPV Transducer) of the head assembly [shown in Fig. 2] under head assembly during processing [measuring diffusion length of the wafer]. Further, Yoshino et al teach that the addition of conveying apparatus is advantageous because it moves the wafer around so that the SPV sensor (transducer) is able to evaluate the dielectric breakdown of an oxide layer on the wafer.

The Office Action goes on to state on page 4:

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the apparatus of Kamieniecki et al by adding a conveying apparatus as taught by Yoshino et al in order to move the wafer around so that the SPV sensor (transducer) is able to evaluate the dielectric breakdown of the wafer.

Applicants submit that as amended, claims 53-57 overcome this basis of rejection. The Kamieniecki reference discloses only a single head in a sealed chamber with no conveying apparatus. The Yoshino reference discloses a wafer chuck and moving stage that move the wafer in various positions under the SPV sensor head once the wafer is on the stage. In both cited references, the wafer is loaded beneath the head and measured individually in a manner suitable only for low volume wafer measurements. The conveying apparatus as recited in claims 53-57 of the present invention makes Applicants' invention suitable for high volume production line measurements of wafer characteristics taken during processing, none of which is claimed or rendered obvious in the cited references, taken together or separately.

Yoshino does not teach or disclose an in-process measuring device in which multiple wafers are conveyed under the head assembly during processing. While movement of the head relative to a single wafer for the limited purpose of wafer mapping may occur in Yoshino, neither Kamieniecki nor Yoshino teach bringing a wafer beneath the head in a processing environment for in-process, production line measurements. Neither Kamieniecki nor Yoshino teach an arrangement that permits the mapping wafers during multi-wafer processing.

The Office Action also rejects claims 54-56 as unpatentable over Kamieniecki. Applicants submit that claims 54-56 are allowable as depending from an allowable base claim. The Office Action further rejects claim 57 as unpatentable over Kamieniecki. Applicants submit that claim 57 is also allowable as depending from an allowable base claim.

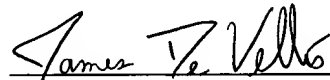
CONCLUSION

For the above given reasons, Applicants respectfully submit that claims 53-57 are allowable as amended and request entry of this response, withdrawal of all bases of objection and rejection, and allowance of claims 53-57 in due course. The Examiner is invited to telephone Applicants under signed representative at 617-310-8664.

Regards,

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